VCS overview

Goal: Learn about VCS overview.

The **Visualization and Control System (VCS)** is a CDAT core module which allows complete control over 1D and 2D graphical displays. It is expressly designed to meet the needs of climate scientists, but because of the breadth of its capabilities, VCS can be a useful tool for other scientific applications. VCS allows wide−ranging changes to be made to the data display, provide for hardcopy output, and includes a means for recovery of a previous display. In the VCS model, the graphical display is definded by a trio of named objects, designated as "primary objects". These include:

- data − which define what is to be displayed. Data can be ingested into the system as a MV, MA, Numeric array, Python list, Python dictionary, ASCII format, or binary format.
- graphics method − which specifies the display technique.
- picture template − which determines the apperance of each segment of the display. Tables for manipulating these primary objects are stored in VCS for later recall and possible use.

Additional capabilities provided by VCS:

- View, select and modify attributes of data variables and of their dimensions.
- Create and modify existing template attributes and graphics methods.
- Save the sate−of−the−system as a script to be run interactively or in a program.
- Save a display as a postscript, encapsulated postscript, gif, tiff, cgm, raster, etc file.
- Perform grid transformations and compute new data varables.
- Create and modify color maps.
- Zoom into a specified portion of a display.
- Change the orientation (portait vs. landscape) or size (partial vs. full−screen) of a display.
- Return quantitative plot values.
- Animate a singel data variable or more than one data variable simultaneously.
- Display different map projections.